MEDICAL STATISTICS, STUDY DESIGN AND OCCUPATIONAL ETHICS

Collected and Created by:

Dr. Abdelrazek Samir

MAY 2016 (23-5-2016)

1- Define: (2 marks for each)

a- Case fatality rate
b- Infant mortality rate
c- General fertility rate
d- P-value

2- Write short notes on: (3 marks for each)

a- Measures of screening test validity
b- Odds ratio
c- Pie chart
d- Multistage random sample.

3- Problem solving: (5 marks for each)

a- The mean blood HB level of 600 students was 10 gm/dl and SD was ± 3. Knowing that the distribution of data follows the normal distribution curve, calculate:-
   1. Number of students whose Hb level > 13 gm/dl
   2. Number of students whose Hb level is ranging from 7 – 16 gm/dl

b- From the following data (8, 9, 4, 12, 7) calculate: Arithmetic mean, Median, Mode, The Range, The Mode and the Mid-range.

٤- أذكر ما تعرفه عن أخلاقيات البحث العلمي؟ (٣,٥ درجة)

أختبار الممارسات والاخطاء المهنية والجوانب المنظمة لها

أذكر ما تعرفه عن :-

١- الاخطاء الطبية التي يعاقب عليها الطبيب المصرح له بمزاولة المهنة.
٢- تكلم عن حالة الضرورة في الاعمال الطبية.

NOVEMBER 2015 (15-11-2015)

5- Define **(10 marks)**

a- Infant mortality rate.
b- Incidence rate.
c- Maternal mortality rate.
d- Epidemiology.
e- Attack rate.

6- Write short account on:

a- Simple random sample **(5 marks)**
b- Pie chart **(5 marks)**
c- Strength and limitation of case-control study **(5marks)**

7- From the following figures: 4, 10, 6, 14, 8, 6 calculate the values of mean, mode, median and SD? **(5 marks)**

٨- اذكر باختصار:

الاعتبارات الاخلاقية خلال عملية البحث العلمي؟ **(٣ درجات)**

MAY 2015 (21-5-2015)

1- Define: **(10 marks)**

a- Maternal mortality rate.
b- Attack rate.
c- General fertility factor.
d- Screening test.
e- Cause-specific death rate.

2- Write short account on:

a- Systemic random sample **(5 marks)**
b- Line graph **(5 marks)**
c- Cross-sectional study **(5 marks)**

3- From the following figures: 10, 13, 7, 14, 6, 10 calculate the values of mean, mode and median (5 marks)

٤- اذكر باختصار

الاعتبارات الاخلاقية خلال عملية البحث العلمي؟ **(٣,٥ درجة)**

MAY 2014 (13-5-2014)

1- Define: (10 marks)

a- Infant mortality rate.
b- Prevalence rate.
c- Maternal mortality rate.
d- Epidemiology.
e- Case fatality rate.

2- Write short Account on:

a- Systemic random sample. **(5 marks)**
b- Clinical trial. **(5 marks)**

3- Write short accounts on:

a- Retrospective cohort study. **(5 marks)**
b- Yield and factors affecting. **(5 marks)**

4- Answer the following:

a- 400 students, mean weight = 60kg and SD - ± 5Kg; compute the total number of students whose weight range from: **(5 marks)**
   1. 50-65 kg
   2. <50 kg.

b- From the following figures: 4, 10, 6, 14, 8, 6 calculate the value of: Mean, mode, median and SD? **(5 marks)**

٥- اذكر:-

أ) واجبات الطبيب نحو المهنة؟ **(٥ درجات)**

ب) اخلاقيات البحث العلمي؟ **(٥ درجات)**

NOVEMBER 2013 (28-5-2013)

1- Fertility Health Indicators (10 marks)

2- Criteria for application of screening health program (10 Marks)

3- Write short notes on:

a- Descriptive study. **(5 Marks)**

b- Simple random sample. **(5 Marks)**

4- Answer the following:

a- Define: Mean, Mode and Median. **(5 marks)**

b- From the following figures: 14, 9, 6, 11, 8, 6. Calculate the values of Mean, Mode and Median **(5 marks)**

٥- اذكر:-

أ- واجبات الطبيب نحو المهنة **(٥ درجات)**

ب- اخلاقيات البحث العلمي **(٥ درجات)**

NOVEMBER 2012 (18-11-2012)

1- Types of epidemiological studies (10 Marks)

2- Screening test (10 Marks)

3- Write short notes on:

a- P-value **(5 marks)**

b- Systemic random sample **(5 marks)**

4- Answer the following

a- Define: Mean, Mode, and median **(5 marks)**

b- From the following figures: 10, 13, 7, 14, 6, and 10. Calculate the values of Mean, mode and median? **(5 marks)**

٥- اذكر:-

أ- واجبات الطبيب نحو زملائه؟ **(٥ درجات)**

ب- اخلاقيات البحث العلمي **(٥ درجات)**

MAY 2012 (26-04-2012)

1- Define (8 marks)

a- P-value
b- Mode and Median
c- Relative risk
d- Surveillance.

2- Write short notes on the following: (12 marks)

a- Criteria should be fulfilled to apply a screening program.
b- Types of data.
c- Matching of controls.
d- Stratified random sample.

3- Choose the best answer (10 marks)

(1) All the following are *false* about mode EXCEPT:
A) It is the best measure for central tendency.
B) It can be used in mathematical formulations.
C) It is easy in calculations
D) It needs organization of the data.

(2) In the study of association between the risk factor and occurrence of certain disease we should answer all these EXCEPT:
A) Is the association is present or not?
B) The strength of association.
C) The direction of the association
D) The causation of the disease

(3) All the following are *false* regards the Odds ratio EXCEPT one:
A) Calculated from case control study.
B) OR > 1 this situation illustrate a protective factor
C) OR < 1 this situation illustrates a risk factor.
D) Calculated from cohort study.

MAY 2011 (5-5-2011)

A) Choose the best answer (5 marks)

1- All the following are *true* regarding cohort study EXCEPT one:
a- Permits observation of many outcomes.
b- Permits calculation of relative risk.
c- Useful for studying rare diseases.

2- **All the following are *false* regarding case control study EXCEPT one:**
   a- A descriptive study design.
   b- The number of control should be less than the number of cases.
   c- Useful for examining common exposure.
3- **All of the following are *false* regarding relative risk EXCEPT one:**
   a- One of the measures of causation.
   b- When it is equal 1, the risk in the exposed is higher than in unexposed.
   c- When it is less than one the factor is protective factor.
4- **Reliability of the screening test is:**
   a- The ability to distinguish between who probably has the disease and who probably does not
   b- Getting the same result when it is repeated.
   c- None of the above.
5- **All the following are *false* regarding arithmetic mean EXCEPT*:***
   a- It indicates the dispersion.
   b- It is calculated by adding a set of numbers and dividing the sum by the count of numbers in the set.
   c- It is ideal in statistical analysis of quantitative variable not normally distributed.

B) The suitable test for testing the difference between 2 sets of variable (6 marks)

1- The suitable test if one of the cells of qualitative data is less than 5 (………….)
2- The suitable test for testing the difference between more than two means for a not normally distributed quantitative variable is (………….)
3- The suitable test for testing the two proportions (………….)
4- The suitable test for testing the difference between several means for not normally distributed quantitative variable (………….)

C) True or False statements (3 marks)

1- Stratified random sample is the basic type of probability sample. (….)
2- Student's t test indicates the presence of any significant difference between several groups of not normally distributed data (….)
3- For data to be normally distributed, SD should be ≤ 33% of mean (….)

D) Put a definition and give example for (6 marks)

1- Surveillance.

2- Ordinal qualitative variable.
3- Disease burden.

E) Give short account on (15 marks)

1- Simple random sample.
2- Sources of bias in research.
3- Correlation analysis.

F) Put a design for these title and discuss methodology (9 marks)

1- Effectiveness of interferon drug in management of hepatitis C.
2- Incidence of Measles infections among school children.
3- Is diabetes mellitus considered a risk factor for chronic kidney disease?

- **اكتب نبذة مختصرة عن** (٦ درجات)

أ- الحالات التي يسمح فيها للطبيب بافشاء سر المريض.
ب- القتل الرحيم.

NOVEMBER 2009 (20-10-2009)

1- Write short notes on:

a- Sources of statistical bias.
b- From figures (4, 2, 2, 8) calculate, Mean, Mode, Median, Mid-range and standard deviation.

2- Write short notes on:

a- Simple random sample
b- Odds ratio and relative risk
c- Fertility rates

3- Write short notes on:

a- Research design.
b- The incidence of bird flu in the village (I) was estimated to be 2 per 1000 population (the population census = 10,000) and in the village (II) was 5 per 1000 (population census = 5,000), test whether the incidence of bird flu is statistically higher in the village (II) than in village (I) at 5% level.

٤- اذكر:-

أ- ماذا تعرف عن التعليم الطبي الالكتروني e-learning؟
ب- ماذا تعرف عن اخلاقيات المهنة فيما يتعلق ببنوك الحيوانات المنوية واستئجار الارحام؟

MAY 2009 (12-5-2009)

1- Write short notes on:

a- Sources of statistical bias.
b- From the figures (3, 5, 9, 1) calculate, mean, Mode, median, midrange, range and standard deviation.

2- Write short notes on:

a- Stratified random sample.
b- Odds ratio and relative risk.
c- Population census.

3- Write:

a- Methods of research design.
b- The incidence of bird flu in the village (I) was estimated to be 2 per 1000 population (the population census = 10,000) and in the village (II) was 5 per 1000 (population census = 5,000), test whether the incidence of bird flu is statistically higher in the village (II) than in village (I) at 5% level.

٤- ماذا تعرف عن:-

أ- التعليم الطبي الالكتروني e-learning؟
ب- اخلاقيات المهنة فيما يتعلق باستخدام الخلايا الجزعية في علاج الامراض؟

MAY 2008 (13-5-2008)

1- Case control studies.

2- Write short notes on:

a- Stratified random sample.
b- Population pyramid.

3- Write on:

a- Sources of statistical bias.
b- The incidence of Hepatitis A in the village (I) was estimated to be 10% (the population census = 1,000) and in the village (II) was 5% (population census

= 2,000), test whether the prevalence of Hepatitis A is statistically higher in the village (I) than in village (II) at 5% level.

٤- ماهي فوائد استخدام شبكات الانترنت؟

MAY 2007 (15-5-2007)

1- Write short notes on:

a- Advantages and disadvantages in case control studies, Mention examples.
b- Odds ratio and relative risk.
c- Confounders.

2- Write short notes on:

a- Stratified random Sample.
b- Coefficient of variation.
c- Methods of census estimation.

3- Write on:

a- Indices used to assess health status in Egypt.
b- The prevalence of otitis media in the school (I) was estimated to be 5% (number of pupils = 1,000) and in the school (II) was 1% (number of pupils = 500). Test whether the prevalence of otitis media is statistically higher in the school (I) than the school (II) at 5% level.

٤- ماذا تعرف عن:

أ- استخدامات الحاسب الالي في خدمة الطب؟
ب- فيروسات الكومبيوتر وطرق التعامل معها والوقاية منها؟

NOVEMBER 2006 (14-11-2006)

1- Write short notes on:

a- Advantages and disadvantages in case control studies, Mention examples.
b- Main items included in a proposal for a research project.

2- Write short notes on:

a- Simple random sample.
b- Confidence of interval.
c- Population pyramid.

3- Write short notes on:

a- Incidence and Prevalence rate.

b- In the screening of 100 individuals for Diabetes mellitus, the following results was obtained

Screening Test	Reference Test		Total
	+ve	-ve	
+ve	10	20	30
-ve	60	10	70
Total	70	30	100

Calculate: Sensitivity, specificity, false positive, false negative rates, and positive predictive and negative predictive values for screening test.

٤- ماذا تعرف عن:-

أ- مكونات الحاسب الألي؟

ب- فيروسات الكومبيوتر وطرق التعامل معها والوقاية منها؟

MAY 2006 (30-5-2006)

1- Write short notes on:

a- Types of analytical studies.

b- Odds ratio and relative risk

c- Confounders.

2- White short notes on:

a- Multi-stage random sample

b- Coefficient of variation

c- The problem of overpopulation in Egypt.

3- Shot notes on:

a- Incidence and prevalence rates

b- In a village of 20,000 mid-year population, there were 800 live births. 300 total deaths including:

- 120 deaths < 1 year.
- 30 deaths < 28 days
- 4 deaths from bird flu (from total of 6 cases appeared in this village during April)

Calculate:

1- Crude birth rate.

2- Post-neonatal mortality rate
3- Rate of natural increase.
4- Infant mortality rate.
5- Mortality rate from bird flu.
6- Case fatality rate from bird flu.

٤- اذكر

أ- ماهي الفوائد التي تعود على طلبة الطب والاطباء والمجتمع من استخدام شبكات الكومبيوتر؟
ب- ماذا تعرف عن فيروسات الكومبيوتر وطرق التعامل معها والوقاية منها؟

NOVEMBER 2005 (23-10-2005)

1- Design a plan for a research on the size of the problem of hepatitis C in Menoufia governorate.

2- Write short notes on:

a- Normal distribution curve.
b- Coefficient of variation.
c- Methods for conducting census.

3- Write on:

a- Health indices in Egypt.
b- The prevalence of iron deficiency anemia in the school (A) was estimated to be 5% (number of pupils = 2,000) and in the school (B) was 1% (number of pupils = 1,000). Test whether the prevalence of iron deficiency anemia is statistically higher is school (A) than in school (B) at 5% level.

٤- اذكر:-

أ- ما هي فوائد استخدام شبكات الانترنت في المجال الطبي؟
ب- ماذا تعرف عن فيروسات الكومبيوتر وطرق التعامل معها والوقاية منها؟

MAY 2005 (29-5-2005)

1- Write short notes on:

a- Advantages and disadvantages in case control study, mention examples.
b- Main items included in a proposal for a research project.

2- Write short notes on:

a- Simple random sample
b- Standard error
c- Population pyramid

3- Answer the following

a- Incidence and prevalence rates.

b- The prevalence of schistosoma is the village (A) was estimated to be 10% (the population census = 10,000) and in the village (B) was 5% (population census = 20,000). Test whether the prevalence of schistosoma is statistically higher in the village (A) then the village (B) at 5% level.

٤- اذكر:-

أ- ما هي فوائد استخدام شبكات الانترنت؟

ب- ماذا تعرف عن مكونات الحاسب الألي؟

NOVEMBER 2004 (31-10-2004)

1- Design a plan for a research on the size of the problem of bilharzia in Menoufia governorate.

2- Write short notes on:

a- Normal distribution curve.

b- Standard error

c- Methods of conducting census.

3- Answer:

a- Morbidity rates.

b- The prevalence of otitis media in the school (I) was estimated to be 5% (number of pupils = 1,000) and in the school (II) was 1% (number of pupils = 500). Test whether the prevalence of otitis media is statistically higher in the school (I) than the school (II) at 5% level.

٤- اذكر

أ- ما هي فوائد استخدام شبكات الانترنت في المجال الطبي؟

ب- ماذا تعرف عن مكونات الحاسب الألي؟

بحمد الله تم